TECHNICAL MEMORANDUM

Magnolia Tank Farm Infrastructure Technical Report for Water and Sewer - Alternatives Memorandum

PREPARED FOR: City of Huntington Beach

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DATE: April 2, 2018

Introduction

The proposed Magnolia Tank Farm Project ("Project") encompasses approximately 29 acres in the City of Huntington Beach ("City"). The main land use plan, referred to herein as "Alternative 1", will consist of a mixed-use community including a residential neighborhood consisting of 250 dwelling units, a hotel/lodge, as well as retail spaces and open space park areas. There is another, secondary land use scheme that could be also implemented that is referred to as "Alternative 2" which includes the development of 250 units across the Project area (same as Alternative 1) without the hotel/lodge rooms and amenities (see Exhibit 1). The landscaped open space/park area remains the same between Alternative 1 and 2.

As part of the EIR technical documentation for the Project, water and sewer impacts to existing infrastructure associated with the Alternative 1 proposed land use were analyzed to identify any improvements necessary. The current draft of the Magnolia Tank Farm Infrastructure Technical Report for Water and Sewer ("Alternative 1 Report") which was submitted to the City on 3/23/2018 and focuses its analysis on the Alternative 1 Project buildout.

The City has requested that any impacts associated with the Alterative 2 land use plan also be analyzed. Therefore, the purpose of this Technical Memorandum is to inform the City of any significant impacts that are associated with the Alternative 2 land use plan.

Alternative 1 and Alternative 2 Water Impacts

The following CEQA impact analyses were conducted for Alternative 1 for water infrastructure systems. The Project was determined to have a significant impact on the environment if it resulted in any of the following:

A. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

B. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

C. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

D. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The two CEQA thresholds from the Alternative 1 Report that may be affected by Alternative 2 land use scheme are Impacts B and C and are discussed in more detail below.

As shown in the Alternative 1 Report, no significant impacts to water infrastructure were found for the Alternative 1 land use scheme. In the Alternative 1 Report, residential water demand estimates were calculated using water demand factors from the City of Huntington Beach's Urban Water Management Plan SB-X7-7 2020 water demand reduction goal. All non-residential demand factors were taken from the City of Santa Ana design standards as no factors were available for the City of Huntington Beach. Table 1 shows water demand calculations for Alternative 1.

Table 1 Alternative 1 Water Demand Estimates

Land Use	Unit Water Demand	Persons per DU Assumption	Project DU, rooms or acreage	Daily Water Usage (gpd)
Residential Units – 250 Medium Density DUs	142 gpd/capita	2.62	250 DU	93,010
215 Lodge Rooms – 175 rooms + 40 hostel units	180 gpd/room	--	215 rooms	38,700
Lodge Restaurant Uses	2,500 gpd/acre	--	0.17 acres	425
Lodge Amenities	2,500 gpd/acre	--	1.07 acres	2,675
Common Area Landscaping	3,000 gpd/acre	--	12.19 acres	36,570
			Total Proposed Water Demand	171,380
			Total Existing Water Demand	14,730
			Project Net Water Demand (Proposed – Existing)	+156,650

Estimated water demands for Alternative 1 are 171,380 gallons per day (gpd) (0.171 million gallons per day [mgd]), which represents an increase in 156,650 gpd as compared to existing conditions.

Table 2 below shows water demand calculations for Alternative 2. The landscaped/open space area remains the same between the two Alternatives.

Table 2. Alternative 2 Water Demand Estimates

Land Use	Unit Water Demand	Persons per DU Assumption	Project DU, rooms or acreage	Daily Water Usage (gpd)
Residential Units – 250 Medium Density DUs	142 gpd/capita	2.62	250 DU	93,010
215 Lodge Rooms – 175 rooms + 40 hostel units	180 gpd/room	--	--	--
Lodge Restaurant Uses	2,500 gpd/acre	--	--	--
Lodge Amenities	2,500 gpd/acre	--	--	--
Common Area Landscaping	3,000 gpd/acre	--	12.19 acres	36,570
			Total Proposed Water Demand	129,580
			Total Existing Water Demand	14,730
			Project Net Water Demand (Proposed – Existing)	+114,850
			Alternative 2 Net Water Demand (Alternative 2-Alternative1)	-41,800

Estimated demands for Alternative 2 are 129,580 gpd (0.129 mgd). By removing the hotel/lodge and its associated demands on water and replacing it with dwelling units, Alternative 2 reduces the proposed water demand by 41,800 gallons per day, or 24.4%. The Alternative 1 Report notes that the existing 12" City water line that the Project proposes to connect to is able to supply the Project with an average of 171,000 gallons per day, which covers the conservative proposed demand for both Alternatives 1 and 2.

As mentioned, the two CEQA thresholds from the Alternative 1 Report that may be affected by Alternative 2 for water are Impacts B and C. As no significant impacts to B or C were found for Alternative 1, and Alternative 2 further reduces demand, Alternative 2 will have no significant impact on water infrastructure.

Alternative 1 and Alternative 2 Sewer Impacts

The following CEQA impact analyses were conducted for Alternative 1 for sewer infrastructure systems. The Project was determined to have a significant impact on the environment if it resulted in any of the following:

A. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

B. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

C. Have sufficient water supplies available to serve the project from existing entitlements

and resources, or are new or expanded entitlements needed?

D. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The CEQA thresholds that may be affected by Alternative 2 for sewer are Impacts B and D and are discussed in more detail below.

As shown in the Alternative 1 Report, no significant impacts were determined to be generated by the Alternative 1 land use scheme on wastewater infrastructure. Wastewater generation factors for residential and commercial categories from the City of Huntington Beach were used to estimate sewer flows. The City's sewer demand factors are based on acreages as opposed to dwelling units or rooms. Because residential sewer demand factors are greater per acre compared to commercial sewer demand factors, Alternative 2 results in slightly greater sewer flows over Alternative 1. Table 3 shows sewer flow calculations for Alternative 1.

Table 3. Alternative 1 Sewer Flow Estimates

Land Use	Units (acres)	Avg. Generation Factor (gpd/unit)[2]	Total Wastewater Generation (gpd)
Residential Units – 250 Medium Density DUs	19.6 acres	3,200 gpd/acre	62,784 gpd
Lodge Rooms – 215 rooms	2.98 acres	2,000 gpd/acre	5,960 gpd
Lodge Restaurant Uses	0.17 acres	2,000 gpd/acre	340 gpd
Lodge Amenities	1.07 acres	2,000 gpd/acre	2,140 gpd
		Total Proposed Wastewater Flow	71,224
		Total Existing Wastewater Flow	0
		Project Net Wastewater Flow (Proposed – Existing)	+71,224

Estimated sewer flows for Alternative 1 are 71,224 gpd (0.071 mgd). This represents a 71,224 gpd increase over existing as there are currently no wastewater flows from the area.
Table 4 shows sewer flow calculations for land use under Alternative 2.

Table 4. Alternative 2 Sewer Flow Estimates

Land Use	Units (acres)	Avg. Generation Factor (gpd/unit)	Total Wastewater Generation (gpd)
Residential Units – 250 Medium Density DUs	23.2 acres	3,200 gpd/acre	74,240 gpd
Lodge Rooms – 215 rooms	--	2,000 gpd/acre	--
Lodge Restaurant Uses	--	2,000 gpd/acre	--
Lodge Amenities	--	2,000 gpd/acre	--

Total Proposed Wastewater Flow	74,240
Total Existing Wastewater Flow	0
Project Net Wastewater Flow (Proposed – Existing)	+71,224
Alternative 2 Net Wastewater Flow (Alternative 2 – Alternative 1)	+3,020

As shown above, the estimated flows for Alternative 1 are 71,224 gpd (0.071 mgd) and 74,240 gpd (0.074 mgd) for Alternative 2. Therefore, Alternative 2 yields a slightly higher demand of 3,020 gpd (0.003 mgd), or an increase of 4.1%.

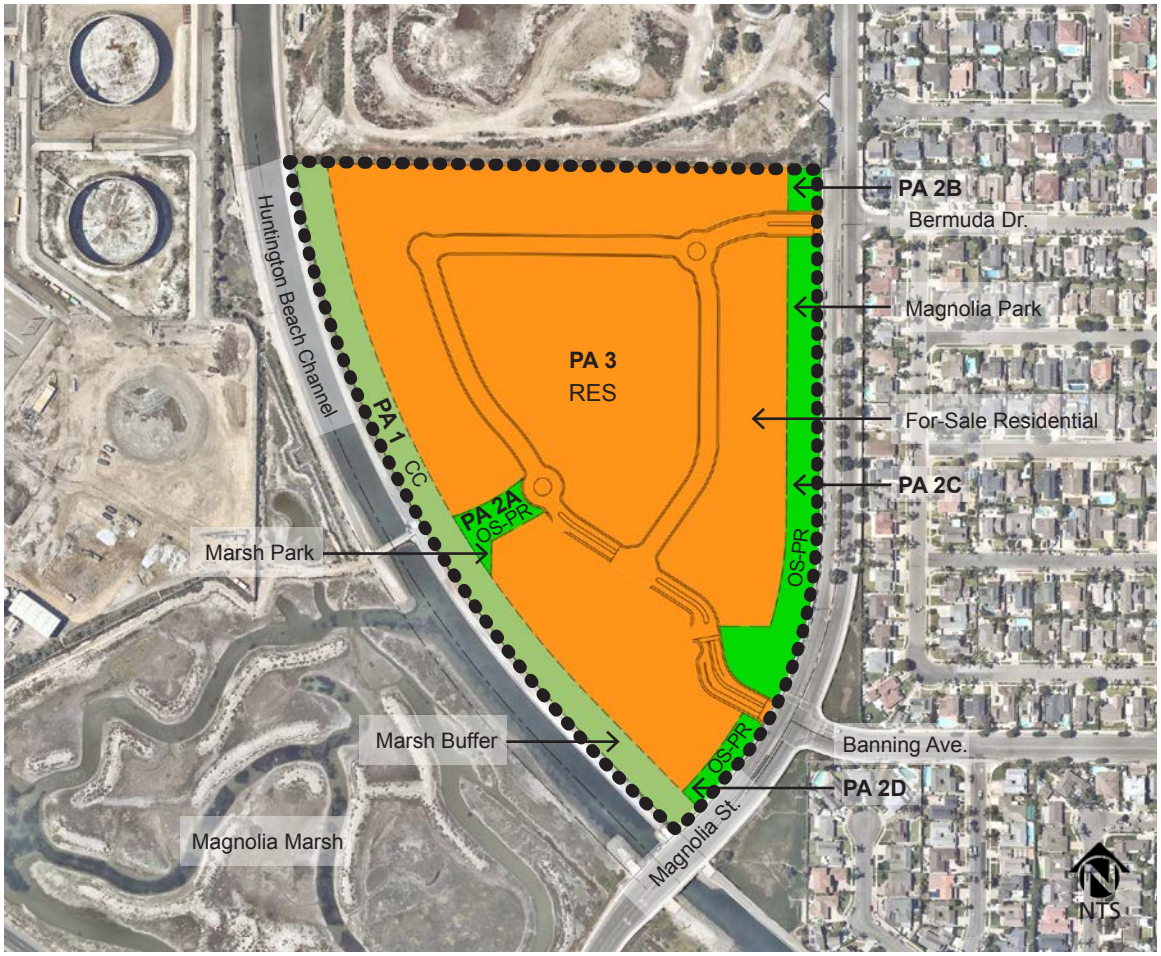
As mentioned, the CEQA thresholds that may be affected by Alternative 2 for sewer are Impacts B and D. Alternative 1 was determined to have no significant impact on Impact B. As mentioned in the Alternative 1 Report, the Orange County Sanitary District (OCSD) provides wastewater collection services for the Project area via City connections to a 78" OCSD trunk line within Magnolia Street. OCSD ran their sewer capacity model analysis to estimate peak sewer flows and determined that the 78" line has capacity to handle estimated peak flows up to 258,400 gpd (0.26 mgd) from the proposed Project. Project flows will travel to and be treated by OCSD Wastewater Treatment Plant #2 (WWTP2) which has a capacity of approximately 150 mgd. 2017 flows to WWTP2 were estimated to be 76 mgd yielding an available sewer treatment capacity of 74 mgd. In the Alternative 1 Report, it was determined that Alternative 1's increased average flows of 0.07 mgd would not result in the need for new wastewater facilities or treatment capacity. The Alternative 2 estimated flow of 0.07 mgd (increased flow estimates of 0.003 mgd over Alternative 1) will not alter any conclusions determined for the Project's impact on sewer systems.

Similar to Impact B, Impact D will not be affected by Alternative 2 as OCSD has confirmed capacity within their sewer trunk lines and treatment facilities to handle proposed increased flows from the Project beyond the additional 0.003 mgd posed by Alternative 2.

Conclusion

The Alternative 1 Report demonstrates that the proposed increase in water demand and sewer flows from developing the Project area will not have a significant impact on any CEQA impact thresholds. In the Alternative 2 land use scheme, water demand will decrease. As no significant impact was found for Alternative 1 water demand, Alternative 2 will have no significant impact on water infrastructure. If Alternative 2 is implemented, sewer flows are projected to have a slight increase. However, this increase will not alter any CEQA impact conclusions determined for Alternative 1, and Alternative 2 will have no significant impact on wastewater infrastructure. No mitigation measures are required.

Exhibit 1: Alternative 2 Land Use Plan



Legend

●●●●●●●	Specific Plan Area
	PA 1 - Coastal Conservation (CC)
	PA 2 - Open Space - Parks and Recreation Subdistrict (OS-PR)
	PA 3 - For-Sale Residential (RES)